

INLET PROTECTION

IP

DESCRIPTION AND PURPOSE

- INLET PROTECTION (IP) CONSISTS OF BARRIERS INSTALLED AROUND AN INLET TO CREATE PONDING AND SEDIMENT DEPOSITION PRIOR TO WATERS ENTERING A STORM DRAIN. BARRIERS CAN INCLUDE A COMBINATION OF ROCK SOCKS, GRAVEL BAGS, SEDIMENT CONTROL LOGS, SILT FENCE, CINDER BLOCKS, AND OTHER MATERIALS APPROVED BY LOCAL JURISDICTIONS. REFER TO SPECIFIC BMP DETAILS FOR ADDITIONAL INSTALLATION AND MAINTENANCE NOTES.

SUITABLE APPLICATIONS

- ANY OPERATIONAL INLET STRUCTURE DOWN SLOPE OF A DISTURBANCE AREA TO ACCEPT FLOWS.
- EXISTING STORM DRAIN INLETS OUTSIDE OF CONSTRUCTION SITE THAT MAY RECEIVE RUNOFF FROM UPSTREAM DISTURBED AREAS, TRACKED OUT SEDIMENT OR TEMPORARY STOCKPILES.

LIMITATIONS

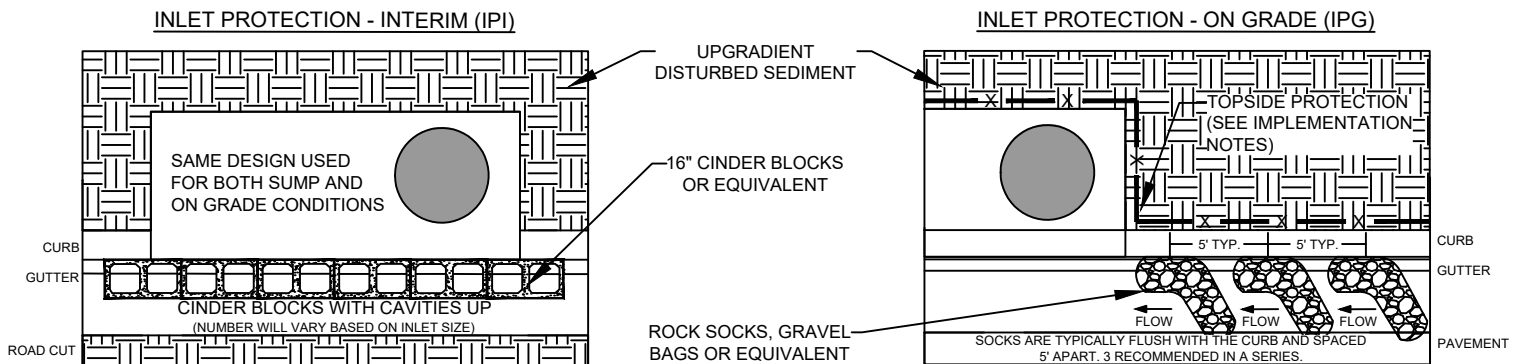
- INLET PROTECTIONS ARE OFTEN THE LAST BARRIER PRIOR TO RUNOFF ENTERING THE STORM SEWER, AND ARE NOT DESIGNED TO BE THE ONLY LINE OF DEFENSE. TO FUNCTION EFFECTIVELY, UPSTREAM TREATMENT IS RECOMMENDED.
- BESIDES THE INTERIM DETAIL, INLET PROTECTIONS ARE NOT MEANT TO FULLY BLOCK AN INLET. MEASURES MUST BE INSTALLED TO ENSURE THE INLET WILL CONTINUE TO FUNCTION WITHOUT COMPLETELY BLOCKING FLOWS TO AVOID LOCALIZED FLOODING.
- APPROPRIATE DESIGN SELECTION IS IMPERATIVE TO THE SUCCESS OF THE INLET PROTECTIONS' PERFORMANCE.

IMPLEMENTATION

- WHEN SELECTING THE TYPE OF INLET PROTECTION CONSIDER ONSITE FACTORS SUCH AS TRAFFIC, ANTICIPATED FLOWS, AND SITE SAFETY.
- INLET PROTECTION SHALL BE INSTALLED AS SOON AS POSSIBLE AFTER INLET CONSTRUCTION. IF A RAINFALL EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO EVENT.
- 16" CINDER BLOCKS ARE TYPICALLY ACCEPTED. FOR INTERIM INLET PROTECTION, PLACE BLOCKS AS SHOWN WITH CAVITIES UP TO COMPLETELY BLOCK OFF INLET. AS SOON AS PAVEMENT IS PLACED, MODIFY THE IP TO THE APPROPRIATE DESIGN DETAIL.
- CINDER BLOCKS ON SUMP CONDITION INLET PROTECTIONS CAN BE ROTATED 90° AS SHOWN. IN THESE CASES, A 2X4 WOOD STUD MAY BE USED FOR ADDITIONAL SUPPORT. CURB GRATE INLETS MAY REQUIRE ROTATED BLOCKS.
- ROCK SOCKS TYPICALLY CONSIST OF 1 1/2" (MINUS) CRUSHED ROCK WITH FRACTURED FACES ON ALL SIDES. OTHER MATERIALS SUCH AS GRAVEL, SAND, AND RUBBER MAY BE ACCEPTABLE. REFER TO ROCK SOCK DETAIL FOR ADDITIONAL SPECIFICATIONS INCLUDING JOINING OR OVERLAPPING OF ROCK SOCKS.
- SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH.
- TOPSIDE PROTECTION IS ONLY NECESSARY IF THE AREA UPGRADE OF INLET IS DISTURBED. MAY CONSIST OF SILT FENCE, SEDIMENT CONTROL LOG, EROSION CONTROL BLANKET, HEAVYWEIGHT WATTLE, OR COMPARABLE. IF NO SEDIMENT CONTROL IS PLACED ON UPGRADE DISTURBANCE, AN ADDITIONAL ROCK SOCK MAY BE PLACED ON TOP OF INLET ALONG CURB LINE.
- FOR DROP INLET PROTECTIONS, OVER-EXCAVATION AROUND INLET CAN BE USED IN PERVIOUS AREAS IN CONJUNCTION WITH SURROUNDING SEDIMENT CONTROL BMP. STRAW BALES MAY BE ALLOWED IN CERTAIN MUNICIPALITIES.

INSPECTION AND MAINTENANCE

- INSPECT IN ACCORDANCE WITH LOCAL REGULATIONS AND SITE SWMP. TYPICALLY EVERY 7 CALENDAR DAYS; OR EVERY 14 CALENDAR DAYS AND WITHIN 24 HOURS AFTER A STORM EVENT CAUSING SURFACE EROSION (72 HOURS IF THE SITE IS INACTIVE.)
- IT IS THE PERMITEE'S RESPONSIBILITY TO ADJUST OR REMOVE INLET PROTECTIONS AS NECESSARY PRIOR TO LARGE RAIN EVENTS THAT MAY EXCEED THE NORMAL CAPACITY OF THE INLET PROTECTION TO PREVENT FLOODING AND POTENTIAL PROPERTY DAMAGE.
- SEDIMENT ACCUMULATED UPSTREAM SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP (NO MORE THAN HALF THE STORAGE CAPACITY OF THE INLET PROTECTION).
- REPAIR OR REPLACE INLET PROTECTION IF GAPS OR TEARS ARE OBSERVED IN ROCK SOCK, GRAVEL BAG, OR EQUIVALENT WEIGHTED BMP. BROKEN CINDER BLOCKS ARE TO BE REPLACED.
- IMPROPER INSTALLATION, OR DISPLACEMENT FROM TRAFFIC OR LARGE STORM EVENTS ARE TO BE CORRECTED AS SOON AS POSSIBLE AFTER BEING OBSERVED.
- INLET PROTECTIONS ARE TO REMAIN IN PLACE UNTIL UPSTREAM AREAS ARE STABILIZED AND APPROVED BY LOCAL JURISDICTION.
- ANY DISTURBED AREAS OBSERVED AFTER OR DURING REMOVAL WILL REQUIRE IMPLEMENTATION OF STABILIZATION EFFORTS.



Optional: CMU blocks may be spaced apart if encircled by rock socks or equivalent on interim protection

ADAPTED FROM URBAN STORM DRAINAGE CRITERIA MANUAL VOLUME 3 BY UDFCD, CITY OF AURORA STANDARD DETAILS, AND DOUGLAS COUNTY GESC DETAILS

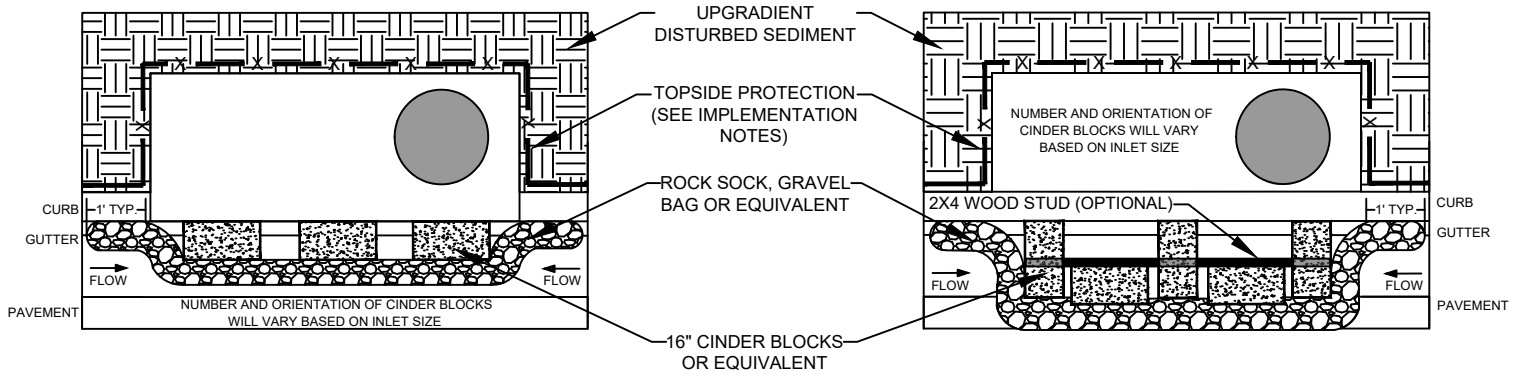
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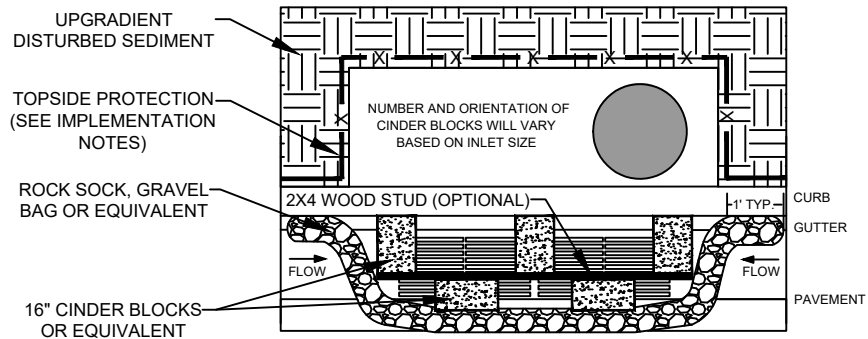
INLET PROTECTION

IP

INLET PROTECTION - SUMP (IPS)



INLET PROTECTION - SUMP WITH DROP INLET GRATE (IPS)



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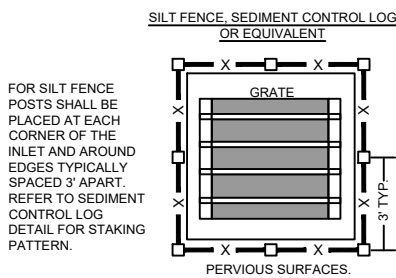
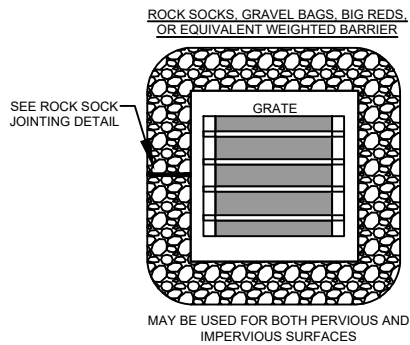
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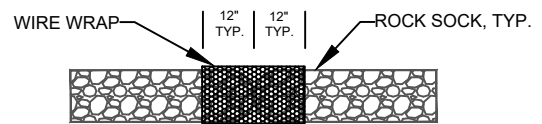
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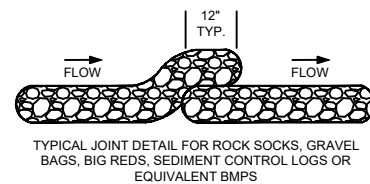
INLET PROTECTION - AREA/DROP (IPA)



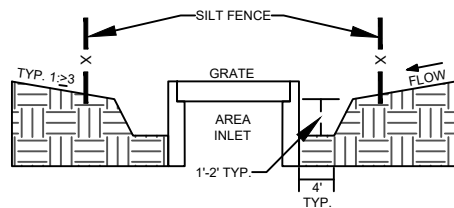
ROCK SOCK JOINTING



ANY GAP AT JOINT SHALL BE FILLED WITH AN ADEQUATE AMOUNT OF 1 1/2" (MINUS) CRUSHED ROCK AND WRAPPED WITH ADDITIONAL WIRE MESH SECURED TO ENDS OF ROCK REINFORCED SOCK. AS AN ALTERNATIVE TO FILLING JOINTS BETWEEN ADJOINING ROCK SOCKS WITH CRUSHED ROCK AND ADDITIONAL WIRE WRAPPING, ROCK SOCKS CAN BE OVERLAPPED (TYPICALLY 12" OVERLAP) OR TIGHTLY ABUTTED TO AVOID GAPS.



INLET PROTECTION - OVER-EXCAVATION (IPOX)

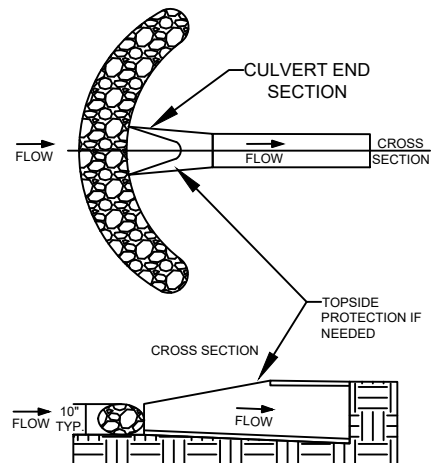


OVER-EXCAVATION INLET PROTECTION IS PRIMARILY APPLICABLE FOR SITES THAT HAVE NOT YET REACHED FINAL GRADE AND SHOULD BE USED ONLY FOR INLETS WITH A RELATIVELY SMALL CONTRIBUTING DRAINAGE AREA. WILL REQUIRE ROCK FILTER MODIFICATION IF USED IN CONCENTRATED FLOWS.

MIRAFI FABRIC IS ALLOWED AS AN INLET PROTECTION TO GO ALONG WITH OVEREXCAVATION.

INLET PROTECTION - CULVERT (CIP)

ROCK SOCKS, GRAVEL BAGS, BIG REDS,
OR EQUIVALENT WEIGHTED BARRIER



KEY IN ROCK SOCK 0" ON BEDROCK, PAVEMENT OR RIPRAP
KEY IN ROCK SOCK 2" ON EARTH

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